

# **On-Farm Irrigation**

**PUBLICATION**

## **Surge Irrigation**

Water Management Handbook Series  
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### About This Publication:

Surge Irrigation is the second in a series of water management handbooks developed by the University of California Irrigation Program. The authors would like to gratefully acknowledge the funding provided for this project by the U.S. Department of Agriculture Water Quality Initiative and the California Energy Commission.

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## Introduction:

Surge irrigation -- turning irrigation water on and off as it flows down the furrow -- offers a number of important advantages over conventional continuous-flow surface irrigation. Properly managed, and under the right conditions, the surge method can cut down on surface runoff, lessen deep percolation, save water, and reduce energy costs. Surge irrigation also offers the potential for irrigation to be semi-automated. On the negative side, surge irrigation requires close management. Because it slows the water infiltration rate, surge irrigation can lead to under-irrigation, and if not managed properly can actually increase runoff compared to conventional irrigation methods. It also requires gated pipes and carries with it the need to maintain surge equipment.

This handbook, which draws on the field experience of University of California irrigation specialists and farm advisors, is intended to help water managers use surge irrigation. Designed as a practical guide, it explains how surge irrigation can overcome variations in soil texture throughout the field, make water infiltration more uniform, and improve overall irrigation efficiency. Readers should scan the glossary at the back of the book to familiarize themselves with the key terms before working through the text.

## Questions or Comments

Any questions about the handbook or about surge irrigation can be directed to the authors:

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